Configuration Management (CM) at NASA/Johnson Space Center (JSC)

An examination of CM activities in Space Life Sciences Directorate (SLSD) at NASA/Johnson Space Center (JSC)

Presentation Outline

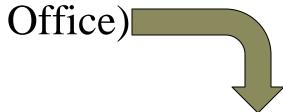
- Wyle Integrated Science and Engineering, Houston, Texas
- Space Life Sciences Directorate at JSC
- NASA CM Interfaces
- SLSD-Bioastronautics Planning System (BPS)
- CM Metrics
- Next Steps

Wyle

- Headquartered in El Segundo, CA
- 4,800 employees
- o 50-plus primary facilities nationwide
- Approx. \$1.1 billion annual revenues from core customers,
 Department of Defense, NASA, and leading aerospace contractors
- Operating entities:
 - Aerospace Group
 - o <u>Information Systems Group</u>,
 - Integrated Science and Engineering Group
 - CAS Group

Wyle Integrated Science & Engineering - Houston

Bioastronautics Contract (Contract Support



Configuration Management

Office



SLSD Mission Statement:

"To optimize human health and productivity for space exploration"



SLSD Internal Homepage

Welcome to Space Life Sciences



About SLSD

Boards

SA CM

Tools

Safety

QMS

Flight Related

Export Control

Risks

SLSD ORGANIZATION

Events



INNOVATION LECTURE SERIES:

EVA GUINAN, MD - HARVARD MEDICAL SCHOOL

Eva Guinan, MD, Associate Professor of Pediatrics, Associate Direction, Center for Clinical and Translational Research at Harvard Medical School, was featured during the September 7, 2011 Innovation Lecture Series. She presented 'Opening

News and Announcements



NEW COLLABORATIVE SPACE:

BUILDING 37 COLLABORATIVE LIBRARY

Looking for a place to connect with your colleagues? Check out the recently transformed B37 Collaborative Library. located on the second floor of B37. This creative space offers a fun, casual gathering place for 15 persons and features

SA: SLSD

Space Life Sciences

SA Administrative Team SA Secretarial Homepage

SA2: HRP

Human Research Program

SA3: VDO

Vehicle Development Office

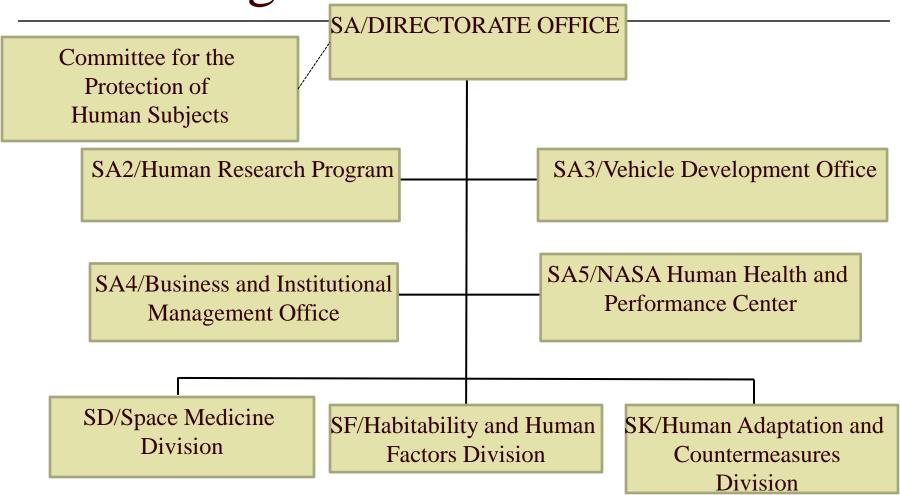
SA4: BIMO

Business & Institutional Management

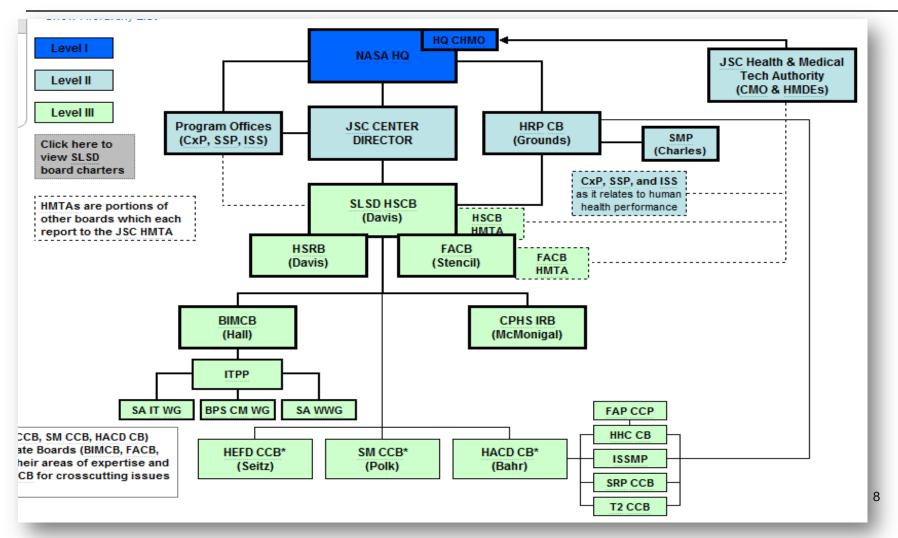
SA5: NHHPC

NASA Human Health & Performance Center

SLSD Organization



SLSD Board Organization



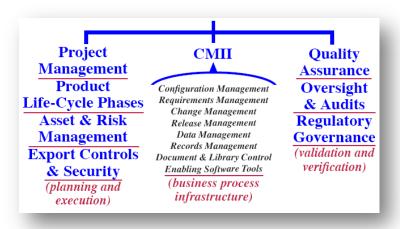
JSC/Space Life Sciences Directorate (SLSD) Interfaces

- CM Support to the SLSD
 - Boards Administration (board charters, agenda, minutes, actions, directives, membership, and change requests)
 - External Program (ISS, Shuttle closeout, EVA, MPCV/Orion) Change control
 - Forms, Document, and Data Management
 - Flight Hardware documents/drawings

JSC/Space Life Sciences Directorate (SLSD) Interfaces

- CM Support to the SLSD (continued)
 - Interface with other electronic management systems – JSC Organizational Directives, COSMOS, EDMS, EDCC, Export Control, QMS, ISO 9001, Inclusion & Innovation, Risks, etc.

It's like balancing everything CM II does!!





johnson space center Information Resources Directorate

JSC Library Scientific & Technical Information Center

1

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Sign In

JSC Library Homepage How do I... Collections Training JSC Library Wiki Services About Us

Library Hotlinks

JSC Document Index System

NASA Aeronautics & Space Database (NASD)

NASA Digital Library

Specifications & Standards

NASA Galaxie

E-books/Journals

UHCL Collection

JSC History

JSC Video & Still Imagery

Library Forms



JSC Library Website



Hot days of summer!

Transition of JSC's Library Services From UH-Clear Lake

Find out more about this important announcement!

Ouick Search

Articles and Books (Publicly available)

JSC Documents

Images and Video

1SC

Library Website

About Library QuickSearch

JSC Featured Authors (Click here for more)

Author	Title	Journal Name	Month/Year
Nuevo, M.; Milam, S.N.; Sandford, S.A.; De Gregorio, B.T.; Cody, G.D.; Kilcoyne, A.L.D.	XANES analysis of organic residues produced from the UV irradiation of astrophysical ice analogs	Advances in Space Research	September 2011
Perchonok, Michele H.; Weiss, Ilan; Bugbee, Bruce.; Mauer, Lisa J.; Stoklosa, Adam M.	Composition and functional properties of apoque and perigee compared to common terrestrial wheat	International Journal of Food Properties	September 2011

Lib	Library News				
Act	tions ▽				
Ø	Title	Edit			
0	STIC E-Notes				
	NASA Budgets				
	Copyright Basics Video				
	Copyright Guide				
	Federal Daily				



Home

News

Support

Account Request

Related Links

Site Map

Please follow this link for a quick reference guide to electronic Change Requests (eCR).



About CoSMOS

The Configuration Status Management Operations System (CoSMOS) supports configuration management process for the ISS Program.

CoSMOS is used to document, track, and manage ISS Program Change Requests (associated directives, actions, etc.), Program Directives, Deviations & Waivers, and CoFR Exceptions. All users must have a CoSMOS user ID to access the system.

Enter Application

Create eCR

ELECTRONIC DOCUMENT MANAGEMENT SYSTEM



Home

Enter EDMS

Request Account

ISS Home » EDMS

Upcoming

Common Searches

- · ISS Documents by Number
- ISS Program Released Documentation
- Change Data by Type (SSCNs/CRs)
 ISS Program Configuration Management Blank Forms
- · Additional Searches

Application Support Center (ASC)

Email: Application Support Center Monday - Friday: 8 AM - 5 PM Central Emergency After-Hours:

News

Releases Outages User Forums

Help

Application Support **Data Location Support** Quick Reference Guides

Training

Courses User Guides

Information

About EDMS FAQS System Requirements

Welcome, Louiscioletti

Quit EDCC

On Sept. 24th, EDCC/EDRS will switch from eAuth to NDC for authentication. Following this change, all users will be prompted to login using their NDC (Windows) username/password before accessing the application.

Authorized users only

Order Manually Released Copies
EDRS File Compatibility

EDRS User Manual

Request Drawing Numbers
Download Additional Software

Vendor Drawing Change Utility

EDCC Public Options

Create Account Request Links to Other Drawing Sites

Contact Us

Account Provisioners By OPR EDCC Maintenance Schedule

External Tools

Adlib PDF Conversion Utility idMAX

Cage Code Search (BINCS)

......

QUALITY MANAGEMENT SYSTEM

Search QMS ▼

Lessons Learned

Knowledge Online

Lean 6 Sigma

Quality System Management Review (QSMR)

Center Director Metrics

QPID Application

Open QPID Report

3-Year Audit Plan

Training

Process Modeling

Resources

Home Quality Systems Panel

Audits

CA/PA

Who To Call

QMS Core Directives

JSC Directives

Additional Documents >

Organization Master Lists

Master List Custodian Tools

Johnson Space Center Quality Policy
To provide products and services that meet or exceed all custo

Master List Search



e, cost, and schedule.

^

SEPTEMBER 2011

S	М	Т	W	Т	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

No events scheduled yet for September

Certificates



Responsible NASA Official: Jean E. (Jeanie) Engle | Curator: Orlando Bongat | Site Administration

Web Accessibility and Policy Notices | JSC Home Last Modified: 02/03/2011

Organizational Master List: Organizational Master List:SA

Return to the Organizational Master List Screen

Last Revision Date: 08/25/2011-13:21:30 This version posted by:

Documents

Doc. Num.	Title	Rev.	Revision Date	PCN & Date	Last Review Date	OPR
SA-WI- 001	Space Life Sciences Directorate Master Work Instruction	v	10/01/09	2/19/2010	N/A	SA
SA-WI- 010	Software License Management Plan	Basic	09/20/07	N/A	N/A	SA
SA-WI- 013	Information Technology Management Plan	Basic	08/01/08	N/A	N/A	SA
SA-WI- 014	Project Management of Flight Hardware Developments Work Instruction	Basic	12/01/07	N/A	N/A	SA
SA-WI- 023	SLSD DTO, & Payload Selection & Approval Process for Cross-Division Collaborations Work Instruction	Basic	08/02/08	N/A	N/A	SA
JSC 28330	Space Life Sciences Directorate Configuration Control Management Plan	E	11/22/2010	N/A	N/A	SA
JSC 29365	Space Life Sciences Directorate Contingency Action Plan For Space Flight Programs	I	12/1/2010	NA	N/A	SA
JSC-47066	Space Life Sciences Academy Implementation Plan	Basic	4/1/2010	N/A	N/A	SA
JSC-63398	SLSD Risk Management Plan	A	8/2/2009	N/A	N/A	SA
JSC-63557	Net Habitable Volume Verification Method	Basic	4/9/2009	N/A	N/A	SA
JSC-63566	Crew Health Operations Concept for Constellation Missions	A	3/18/2009	N/A	N/A	SA
TOO (2026	C C C AC C C C C C C C C C C C C C C C	<u>.</u> .	4/1/2000	NT/A	10/1/2010	CA

JSC/Space Life Sciences Directorate (SLSD) Interfaces

- CM Support to the SLSD (continued)
 - Commercial Crew/Cargo Program
 - Blue Origin, Boeing, Space Exploration (Space-X),
 Sierra Nevada, Orbital Sciences









JSC/Space Life Sciences Directorate (SLSD)

- CM Support to the SLSD (continued)
 - Multi-Purpose Crew Vehicle (MPCV)/Orion



SLSD CM Administration

- □ Bioastronautics Planning System (BPS)
 - A customized electronic tool to conduct Control Board administration, Change Control Management, and to provide support for document and data management.
 - BPS also contains modules for External Program Change Control as well as Concurrence Review for the NASA/JSC Directives Management System (JDMS)

Bioastronautics Planning System (BPS) – Worklist view



SLSD Boards and Panels - BPS

Space Life Sciences Directorate

/ Bioastronautics Planning System Configuration Management

My WorkList

My Account

Admin

Board Admin

External Admin

Users' Guides Request Board Access

CCB Support

Create Directives and Action Items

Туре	Description
Directive	Create a new Directive starting with a blank Directive form.
Action Item	Create a new Action Item starting with a blank Action Item form.

CCB Schedules, Agendas, and Minutes

ССВ	Description	
BIMCB Business and Institutional Management Control Board		
BPSCMCB BPSCM Control Board		
CPHS	Committee for the Protection of Human Subjects	
DCB	Directorate Control Board	
ExCHIT	Exploration Crew Health Integration Team	
FACB Flight Activities Control Board		
FAPCCP	FAPCCP Flight Analogs Project Configuration Control Panel	
HACD	Human Adaptation and Countermeasures Division Control Board	
HEFD	FD Habitability and Environmental Factors Division Configuration Control Board	
ннс_св	Human Health and Countermeasures Control Board	
нмта	HMTA Health and Medical Technical Authority	
HRPCB	HRPCB Human Research Program Control Board	
HSCB	HSCB Human System Control Board	
перв	Human System Disk Roard	

SimilarlyISS Boards and Panels

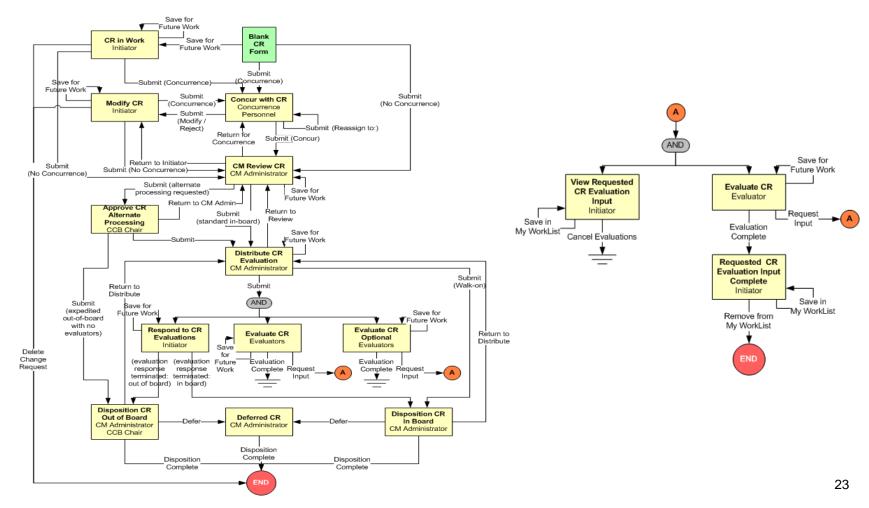
INTERNATIONAL SPACE STATION PROGRAM CONTROL BOARDS & PANELS

Program Reviews (ARR SORR SDOM FRR IMPR etc.)

Central Standard Time

Monday	Tuesday	Wednesday	Thursday	Friday
B:00 - IMMT - 30M/118, 119 ISS Mission Management Team B:30 - CRCP - SCTF/2043 Computer Resources Control Panel (Every other Monday) 12:00 - VCB - 4S/4419 Vehicle Control Board 1:00 - MERB - KSC Material and Engineering Review Board 1:00 - AEP - Boeing Tower II CR 3200 Avionics Equipment Panel (1st & 3rd Mondays each month) 3:00 - ISS-CCP-JPRCB - 1/511 ISS-CCP-Joint Program Requirements Control Board 3:30 - JPRCB - 1/602	8:00 - ISS Ops Tag-up - 30/225C ISS Mission Management Team 8:45 - MIP - 4S/4519 MSS Integration Panel 9:00 - SSPCB - 1/511 Space Station Program Control Board 02:00 - T&VCP - 4S/4100 Test & Verification Control Panel 3:00 - JSAP - 45/646C Joint Software Assurance Panel	6:00 - MMIOCB - 4S/4519 Multilateral Mission Integration and Operations Control Board (2nd Wed. of the month) 6:00-8:00 - ICMT - 4S/3419 International Configuration Management Team (2nd Wednesday of Month) 8:30 - PICB/MPICB - 4S/4419 Program Integration & Multilateral Program Integration Control Boards 9:00 - RIP - 4S/4519 Requirements Integration Panel 10:00 - JMICB - 1/602C (2nd & 4th Wednesday) 1:00 - ASCB - SCTF/2043 Avionics Software Control Board 1:00 - PCB/MPCB/BPCB - 4S/4419 Payloads, Multilateral & Bilateral Payloads Control Board 1:00 - S&MACB - 4S/4519 Safety & Mission Assurance Control Board SSCB Space Station Control Board (Quarterly)	Reqs. & Configuration (SPARC) Panel 9:00 - TICB- 4S/4519 Transportation Integration Control Board 11:00 - DSSR - 1/511 Daily Space Station Review	8:00 - ISS Ops Tag-up - 30/225C ISS Mission Management Team 8:30 - SWG - 45/3419 System Working Group 9:00 - CSR - 45/4419 Change Screening Review 1:00 - IMPR (links to ISS MIS) - 1/511 ISS Monthly Program Review (date varies - see calendar)

Bioastronautics Planning System (BPS) – Change Control Process



Bioastronautics Planning System (BPS) - CR Types

- □ Blank Change Request
 - Ability to create and submit a new Change Request starting with an empty form
- □ "Based On" Change Request
 - Ability to create and submit a new Change Request starting with inputs from an existing CR to elevate from Division to Directorate Boards
- □ Revision Change Request
 - Ability to submit a revision to a previously approved CR

How does the SLSD change process work?

- □ Open the appropriate CR form in BPS
- □ Complete required entries, add attachments (docs, from-to matrix, etc.) and determine if in-board or outside of board (alternate

processing)

* = required fields) Page Help					
1. CR NUMBER: TBD BASED ON: SLSDCR-HRFP-05-002	* HRF	ENCES DIRECTORATE P REQUEST (CR)	2. CR DATE: 04/04/2006 03:41 PM 3. NEED DATE: (example: 05/01/2003)		
* 4. CR TITLE: new CR		5. * INITIATOR: Chair, HRFP * MAIL CODE: * PHONE: * E-MAIL: shetheri@tietroni.	x.com		
6. CR TYPE: If OTHER, specify:	V	7. MISSION EFFECTIVITY: Generic Inc 2 Inc 3 9. END ITEM AFFECTED (NOMENCL	3. HARDWARE PAYLOAD: ATURE, P/N, S/N):		
10. RELATED CHANGES:		11. DOCUMENTATION AFFECTED (ATTACH FROM-TO DATA):		

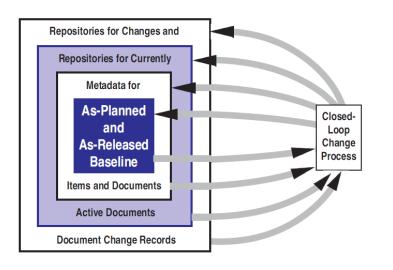
Continued ...

How does the SLSD change process work?

- □ CM Administrator conducts CR review
 - Attachments, evaluators, CR due date, board date (if in-board), reminder notices, CR close date, etc.
- □ Initiator may request a Concurrence Review before formal distribution
- □ CR distributed for evaluation
 - Standard 2 week review
 - Expedited next scheduled board meeting

How does the SLSD change process work?

- □ CR returns to CM Administrator's worklist
- □ Initiator prepares formal CR presentation
 - Electronic copy attached to CCB agenda
- □ CR is formally dispositioned at the CCB
- CM Administrator prepares CR Directive and any necessary action items to close the CR



Closed-loop process maintained!

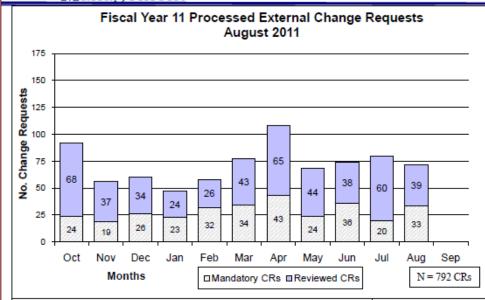
SLSD CM Metrics

- BPS internal and external reports provide data for data capture and analysis
- Monthly CM Quad reports generated on
 - External CR Activity
 - External CR Performance Report
 - SLSD Board Activity Report
 - SLSD Outside-of-Board (OSB) Activity Report
 - SLSD Meetings Support Activity Report
 - SLSD Meeting Minutes Performance Report

SLSD CM Metrics

SA Configuration Management





PURPOSE:

This metric depicts the quantity, type, and disposition of external CRs processed during this fiscal year.

GOAL:

To identify the quantity, types and sources by which external CRs are received at the SA CM Receipt Desk and subsequently dispositioned following SA evaluation.

METRIC DATA DESCRIPTION

Definition:

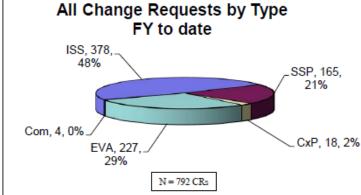
The bar graph at the left identifies total number of external CRs reviewed each month; mandatory (SA) CRs are shown separately.

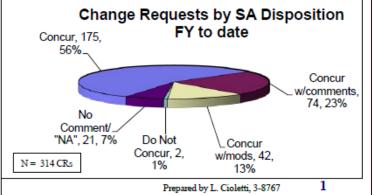
The lower left pie chart shows percent of all CR types by external source for the fiscal year to date.

Lower right pie chart shows the disposition of all the SA mandatory CRs, by fiscal year-to-date.

Metric Analysis:

Total external CRs (72) dropped slightly, but mandatory CRs rose to 33. ISS dominated all CRs with 48% of the yearly total. Total CRs averaged 72 per month with mandatory CRs at 28 per month. Most (56%) of all CR dispositions were "Concur".



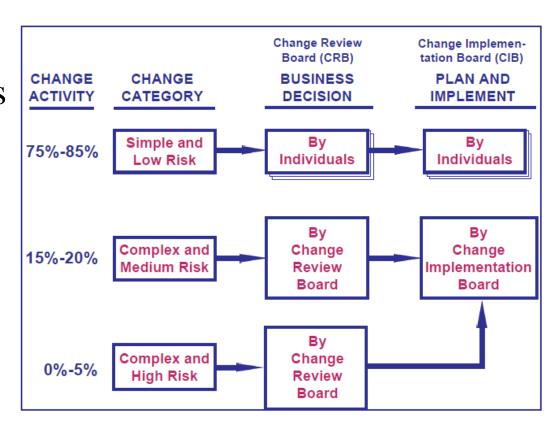


SLSD CM and Fast-track changes

For FY 11:

 89% of Changes dispositioned outside of the SLSD boards

(includes external program CRs and organizational directives)



SLSD CM Homepage

SA CM - Configuration Management

SA NAV About SLSD Boards SA CM Tools Safety QMS Flight Related Export Control Risks

The <u>SLSD</u> Configuration Management Homepage has been developed to establish a dedicated site for <u>SLSD</u> Configuration Management Activities and to give the users a window into all SLSD CM areas of support.

BPSCM

Bioastronautics Planning System Configuration Management - the main tool used by the SA CM group to process Actions, Directives, Change Requests and administer control board operations within Space Life Sciences.



▼ CM INFORMATION

SLSD CM Home

SLSD Hierarchy Chart

CM Calendar

SLSD Board Charters

What's New!

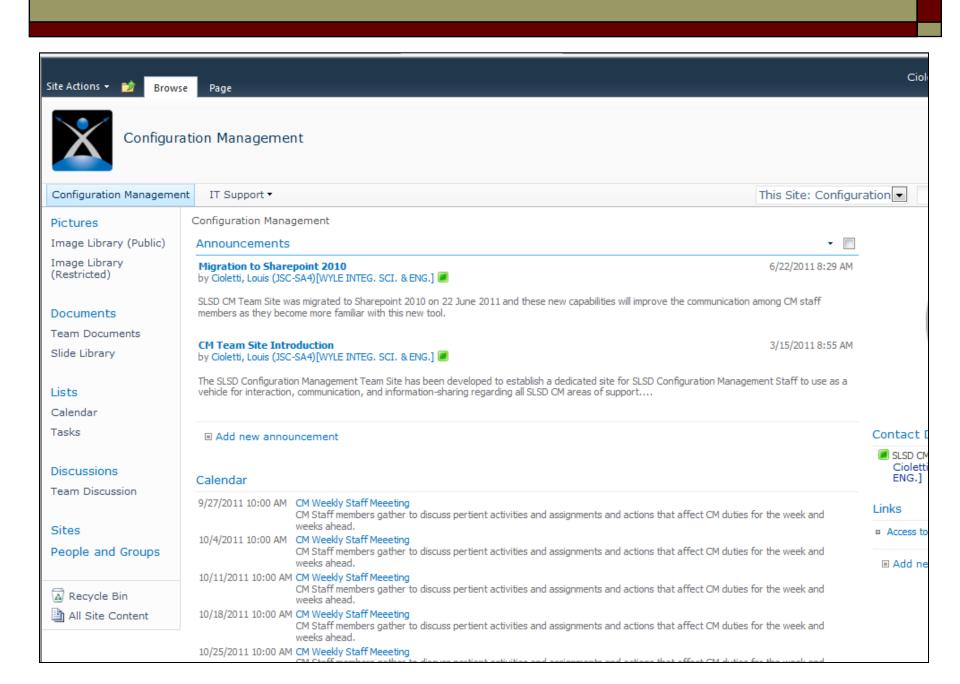
Points of Contact List

Customer Survey Form

Contact SA CM Receipt Desk

SLSD Next Steps

- Development and production of a new BPS-Review Item Dispositions (RID) Module
 - Designed to provide end-to-end support to project teams for various types of reviews such as SRR, PDR, CDR, SAR, etc.
- Development of CM collaboration site in Sharepoint to replace the current CM homepage
 - In work as part of a larger SLSD effort toward innovation



Conclusion

Despite program cancellations, reorganizations, and budget reductions, Configuration Management (CM) at NASA/JSC, Space Life Sciences Directorate (SLSD) continues its broad level of professional and technical support that is more important now as future flights will take us to the far reaches of our Solar System.

Special Thanks to

- SLSD CM Team:
 - Maria (Irma) Williams
 - Vanessa Tilley-Chaudoin
 - Jeff Woods-Bernardine
 - Stacy Grace
 - Suzanne Miller
- NASA Personnel
 - Janice Hall, NASA/SLSD BIM Chief
 - Betty Ann Wallis, NASA/CM Technical Monitor